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EXAMINER	
JONES, CRYSTAL L	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/527,485	TSUKAMOTO ET AL.	
	Examiner	Art Unit	
	Crystal Jones	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-17* is/are rejected.

7)☒ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of **50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The disclosure is objected to because of the following informalities:

On page 27, lines 19 and 23, "and be longer than" should be changed to --and be shorter than--.

On page 29, line 8, "P" should be changed to --Pb--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-8, 10, 11, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Furukawa et al. (U.S. Patent 6,345,026).

Regarding claims 1 and 10, Furukawa et al. disclose a method/apparatus for recording data in an optical recording medium (Fig. 1, element 66) constituted so as to project a laser beam whose power is modulated in accordance with a pulse train pattern (see Fig. 2i) including at least a pulse whose level is set to a level corresponding to a level of a recording power (see Fig. 2i; uppermost level corresponds to a recording power level) and a pulse whose level is set to a level corresponding to a level of a bottom power (see Fig. 2i; bottommost level corresponds to a bottom power level) onto a write-once type optical recording medium (medium must be writeable for recording marks to be formed on it) including a substrate and at least one recording layer formed on the substrate and form at least two recording marks in the at least one recording layer, thereby recording data, the method for recording data in an optical recording medium comprising: determining a pulse train pattern so that a level of a pulse is switched from a level corresponding to the level of the recording power to a level corresponding to the level of the bottom power in accordance with at least one of a length of a first recording mark, a length of a blank region to be formed immediately

after formation of the first recording mark and a length of a second recording mark formed subsequent to the formation of the first recording mark (see Table 2); modulating a power of laser beam in accordance with the thus determined pulse train pattern (see modulation of Fig. 2i); projecting the laser beam onto the at least one recording layer; and forming the first recording mark.

Regarding claim 2, Furukawa et al disclose the method for recording data in an optical recording medium in accordance with claim 1 wherein a delay time period T3 (Table 2; Delaying Time, d2) between a fall time of a data pulse corresponding to the first recording mark and a time at which the level of a pulse is switched from the level corresponding to the level of the recording power to the level corresponding to the level of the bottom power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein T3 (x1, y, z) is a delay time period T3 in the case of forming the first recording mark having length x1 (Table 2; Back Mark Length), the blank region having length y after the formation of the first recording mark (Table 2; Back Space Length) and the second recording mark having length z (Table 2; Recording Mark Length) and T3 (x2, y, z) is a delay time period T3 in the case of forming the first recording mark having length x2 (Table 2; Back Mark Length), the blank region having length y after the formation of the first recording mark and the second recording mark having length z, where x1 is smaller than x2. T3 (x1, y, z)>T3 (x2, y, z) (If x1 is 3T, x2 is 4T, y is 3T, and z is 3T, then T3 (x1, y, z) is n ns and T3 (x2, y, z) is o ns where n>o. See also Fig. 2g; delaying time d2 arranged in ascending length.)

Regarding claims 3 and 4, Furukawa et al. disclose a delay time period T3 between a fall time of a data pulse corresponding to the first recording mark and a time

at which the level of a pulse is switched from the level corresponding to the level of the recording power to the level corresponding to the level of the bottom power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein T3 (x, y1, z) is a delay time period T3 in the case of forming the blank region having length y1 after the formation of the first recording mark having length x and the second recording mark having length z and T3 (x, y2, z) is a delay time period T3 in the case of forming the blank region having length y2 after the formation of the first recording mark having length x and the second recording mark having length z, where y1 is smaller than y2. T3 (x, y1, z)>T3 (x, y2, z) (Table 2; If x is 3T, y1 is 3T, y2 is 4T, and z is 3T, then T3 (x, y1, z) is n ns and T3 (x, y2, z) is t ns where n>t.)

Regarding claims 5-8, Furukawa et al. disclose a delay time period T3 between a fall time of a data pulse corresponding to the first recording mark and a time at which the level of a pulse is switched from the level corresponding to the level of the recording power to the level corresponding to the level of the bottom power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein T3 (x, y, z1) is a delay time period T3 in the case of forming the blank region having length y after the formation of the first recording mark having length x and the second recording mark having length of z2 and T3 (x, y, z2) is a delay time period T3 in the case of forming the blank region having length y after the formation of the first recording mark having length x and the second recording mark having length z2, where z1 is smaller than z2 T3 (x, y, z1)>T3 (x, y, z2) (Table 2; If x is 3T, y is 3T, z1 is 3T, and z2 is 4T then T3(x, y, z1) is n ns and T3(x, y, z2) is q ns where n>q.)

Regarding claims 11 and 14, Furukawa et al. disclose a apparatus/method for recording data, wherein the time at which the level of the pulse of the pulse train pattern used for forming the first recording mark is switched from a level corresponding to the level of the bottom power to a level corresponding to the level of the recording power (see Fig. 2i; time d1) is determined in accordance with at least one of the length of the first recording mark and a length of a blank region to be formed before the formation of the first recording mark (see Table 1).

Regarding claim 15, Furukawa et al. disclose a method for recording data in an optical recording medium in accordance with claim 14, wherein a delay time period T1 (Table 1; Delaying Time d1) between a rise time of a data pulse corresponding to the first recording mark and a time at which the level of a pulse is switched from the level corresponding to the level of the bottom power to the level corresponding to the level of the recording power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein T1 (a1, b) is a delay time period in the case of forming the first recording mark having length b (Recording Mark Length) after formation of a blank region having length a1 (Front Space Length) and T1 (a2, b) is a delay time period in the case of forming the first recording mark having length b after formation of a blank region having length a2 (Front Space Length) longer than a1. T1 (a1, b)>T1 (a2, b) (Table 1; If a1 is 3T, a2 is 4T, and b is 3T, then T1 (a1, b) is a ns and T1 (a2, b) is g ns where a>g.)

Regarding claim 16, Furukawa et al. disclose a method for recording data in an optical recording medium in accordance with claim 14, wherein a delay time period T1 between a rise time of a data pulse corresponding to the first recording mark and a time

at which the level of a pulse is switched from the level corresponding to the level of the bottom power to the level corresponding to the level of the recording power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein T1 (a, b1) is a delay time period in the case of forming a recording mark having length b1 after formation of a blank region having length a and T1 (a, b2) is a delay time period in the case of forming a recording mark having length b2 longer than b1 after formation of a blank region having length a. T1(a, b1)<T1 (a, b2) (Table 1; If a is 3T, b1 is 3T, and b2 is 4T, then T1(a, b1) is a ns and T1(a, b2) is d or more ns where a>d.)

Regarding claim 17, Furukawa et al. disclose a method for recording data in an optical recording medium in accordance with claim 14, wherein the first recording mark is the shortest recording mark (Table 1; marks may be written in accordance with Delaying Time d1=d ns so that the first mark is 3T and the second mark is 4-11T thereby achieving a first recording mark shorter than the second recording mark).

4. Claims 1, 10, 11, 14, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Shoji et al. (U.S. Patent 6,188,656).

Regarding claims 1 and 10, Shoji et al. disclose a method/apparatus for recording data in an optical recording medium (Fig. 1, element 101) constituted so as to project a laser beam whose power is modulated in accordance with a pulse train pattern (see Fig. 22) including at least a pulse whose level is set to a level corresponding to a level of a recording power (see Fig. 22; uppermost level corresponds to a recording power level) and a pulse whose level is set to a level corresponding to a level of a bottom power (see Fig. 22; bottommost level corresponds to a bottom power level) onto a write-once type optical recording medium (medium must be writeable for recording marks to be formed

on it) including a substrate and at least one recording layer formed on the substrate and form at least two recording marks in the at least one recording layer (see Fig. 2; six marks are formed), thereby recording data, the method for recording data in an optical recording medium comprising: determining a pulse train pattern so that a level of a pulse is switched from a level corresponding to the level of the recording power to a level corresponding to the level of the bottom power in accordance with at least one of a length of a first recording mark, a length of a blank region to be formed immediately after formation of the first recording mark and a length of a second recording mark formed subsequent to the formation of the first recording mark (see Fig. 22); modulating a power of laser beam in accordance with the thus determined pulse train pattern (see pulse modulations of Fig. 22); projecting the laser beam onto the at least one recording layer; and forming the first recording mark.

Regarding claims 11 and 14, Shoji et al. disclose the apparatus/method for recording data constituted so as to project the laser beam whose power is modulated in accordance with a pulse train pattern in which the time at which the level of the pulse of thereof is switched from a level corresponding to the level of the bottom power to a level corresponding to the level of the recording power (see Fig. 22; times TF1, TF2 and TF3) is determined in accordance with at least one of the length of the first recording mark and a length of a blank region to be formed before the formation of the first recording mark and form the first recording mark (times TF1, TF2 and TF3 vary according to preceding space length).

Regarding claim 15, Shoji et al. disclose a method for recording data in an optical recording medium in accordance with claim 14, wherein a delay time period T1 (Fig. 22,

times TF1, TF2 and TF3) between a rise time of a data pulse corresponding to the first recording mark and a time at which the level of a pulse is switched from the level corresponding to the level of the bottom power to the level corresponding to the level of the recording power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein T1 (a1, b) is a delay time period in the case of forming the first recording mark having length b (Fig. 22, 6T) after formation of a blank region having length a1 (Fig. 22, 3T) and T1 (a2, b) is a delay time period in the case of forming the first recording mark having length b after formation of a blank region having length a2 (Fig. 22, 6T) longer than a1. T1 (a1, b)>T1 (a2, b) (See Figure. T1 (a1, b) = 5ns and T1 (a2, b) = 1ns)

Regarding claim 17, Shoji et al. disclose a method for recording data in an optical recording medium in accordance with claim 14, wherein the first recording mark is the shortest recording mark (Fig. 5; first recording mark is 11T is the shortest because no succeeding mark is longer.)

5. Claims 1, 10, 11, 14 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Yokoi (U.S. Patent 7,006,419).

Regarding claims 1 and 10, Yokoi discloses a method/apparatus for recording data in an optical recording medium (Fig. 7, element 1) constituted so as to project a laser beam whose power is modulated in accordance with a pulse train pattern (see Fig. 1c) including at least a pulse whose level is set to a level corresponding to a level of a recording power (see Fig. 1c; P_w) and a pulse whose level is set to a level corresponding to a level of a bottom power (see Fig. 1c; P_b) onto a write-once type optical recording medium (Col. 6, lines 63-67) including a substrate and at least one recording layer

formed on the substrate and form at least two recording marks in the at least one recording layer, thereby recording data, the method for recording data in an optical recording medium comprising: determining a pulse train pattern so that a level of a pulse is switched from a level corresponding to the level of the recording power to a level corresponding to the level of the bottom power in accordance with at least one of a length of a first recording mark, a length of a blank region to be formed immediately after formation of the first recording mark and a length of a second recording mark formed subsequent to the formation of the first recording mark (see Fig. 2c); modulating a power of laser beam in accordance with the thus determined pulse train pattern (see pulse modulations of Fig. 2c); projecting the laser beam onto the at least one recording layer; and forming the first recording mark.

Regarding claims 11 and 14, Yokoi discloses the apparatus/method for recording data wherein the laser projecting means is constituted so as to project the laser beam whose power is modulated in accordance with a pulse train pattern in which the time at which the level of the pulse of thereof is switched from a level corresponding to the level of the bottom power to a level corresponding to the level of the recording power (see arrows of Fig. 2c indicating the rising edge of the various pulse signals) is determined in accordance with at least one of the length of the first recording mark and a length of a blank region to be formed before the formation of the first recording mark and form the first recording mark (arrow lengths vary according the recording mark length).

Regarding claim 16, Yokoi discloses a method for recording data in an optical recording medium in accordance with claim 14, wherein a delay time period T1 (Fig. 2c; illustrated by varying arrow lengths) between a rise time of a data pulse corresponding

to the first recording mark and a time at which the level of a pulse is switched from the level corresponding to the level of the bottom power to the level corresponding to the level of the recording power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein T1 (a, b1) is a delay time period in the case of forming a recording mark having length b1 (Fig. 2c; 3T) after formation of a blank region having length a (Fig. 2c; all recording marks have the same preceding blank region) and T1 (a, b2) is a delay time period in the case of forming a recording mark having length b2 (Fig. 2c; 6T) longer than b1 after formation of a blank region having length a. T1(a, b1)<T1 (a, b2) (Fig. 2c; the arrow corresponding the 3T mark is shorter than that of the arrow corresponding the 6T mark.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (U.S. Patent 6,345,026) in view of Fujiune et al. (U.S. Publication 2004/0037197).

Regarding claim 12, Furukawa et al. disclose an optical recording medium (Fig. 1, element 66) comprising a substrate and at least one recording layer and constituted so that at least two recording marks are formed (see Table 2) and data are recorded in the at least one recording layer thereof when it is irradiated with a laser beam whose power

is modulated in accordance with a pulse train pattern (see Fig. 2i) including at least a pulse whose level is set to a level corresponding to a level of a recording power (see Fig. 2i; uppermost level corresponds to a recording power level) and a pulse whose level is set to a level corresponding to a level of a bottom power (see Fig. 2i; bottommost level corresponds to a bottom power level), steps for determining the pulse train pattern so that a level of a pulse is switched from a level corresponding to the level of the recording power to a level corresponding to the level of the bottom power in accordance with at least one of a length of a first recording mark, a length of a blank region to be formed immediately after formation of the first recording mark and a length of a second recording mark formed subsequent to the formation of the first recording mark (see Fig. 2i and Table 2; Power is switched between power levels, thereby generating marks and blank regions).

Furukawa et al. disclose an apparatus for setting recording conditions but fail to disclose the optical recording medium further constituted to be recorded with a program for setting recording conditions, rather the program is stored in the power setting circuits (Fig. 5, elements 52 and 55). The examiner takes Official Notice of the equivalence of the use of power setting circuits or optical disks for their use to store a computer program in the disk drive art.

Fujiune et al. disclose an optical recording medium or controller constituted to be recorded with a program for setting recording conditions ([0145]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc of Furukawa et al. to include a program as in Fujiune et al. because the selection of location for the program in either setting circuit

or optical disc would be a mere substitution of one art-recognized equivalent location for another (see Fujiune et al. [0145]).

Regarding claim 13, Furukawa et al. disclose the optical recording medium in accordance with claim 12, as in the obvious combination above, with steps for determining the time at which the level of the pulse of the pulse train pattern used for forming the first recording mark is switched from a level corresponding to the level of the bottom power to a level corresponding to the level of the recording power (see Fig. 2i; time d1) in accordance with at least one of the length of the first recording mark and a length of a blank region to be formed before the formation of the first recording mark (see Table 1).

Furukawa et al. disclose an apparatus for setting recording conditions but fail to disclose the optical recording medium further constituted to be recorded with a program for setting recording conditions, rather the program is stored in the power setting circuits (Fig. 5, elements 52 and 55). The examiner takes Official Notice of the equivalence of the use of power setting circuits or optical disks for their use to store a computer program in the disk drive art.

Fujiune et al. disclose an optical recording medium or controller constituted to be recorded with a program for setting recording conditions ([0145]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc of Furukawa et al. to include a program as in Fujiune et al. because the selection of location for the program in either setting circuit or optical disc would be a mere substitution of one art-recognized equivalent location for another (see Fujiune et al. [0145]).

7. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoji et al. (U.S. Patent 6,188,656) in view of Fujiune et al. (U.S. Publication 2004/0037197).

Regarding claim 12, Shoji et al. disclose an optical recording medium (Fig. 1, element 101) comprising a substrate and at least one recording layer and constituted so that at least two recording marks are formed (see Fig. 2; six marks are formed) and data are recorded in the at least one recording layer thereof when it is irradiated with a laser beam whose power is modulated in accordance with a pulse train pattern (see Fig. 22) including at least a pulse whose level is set to a level corresponding to a level of a recording power (see Fig. 22; uppermost level corresponds to a recording power level) and a pulse whose level is set to a level corresponding to a level of a bottom power (see Fig. 22, bottommost level corresponds to a bottom power level), steps for determining the pulse train pattern so that a level of a pulse is switched from a level corresponding to the level of the recording power to a level corresponding to the level of the bottom power in accordance with at least one of a length of a first recording mark, a length of a blank region to be formed immediately after formation of the first recording mark and a length of a second recording mark formed subsequent to the formation of the first recording mark (see Fig. 22).

Shoji et al. disclose an apparatus for setting recording conditions but fail to disclose the optical recording medium further constituted to be recorded with a program for setting recording conditions, rather the program is stored in a memory (Fig. 1, element 127 and Fig. 15, element 1520). The examiner takes Official Notice of the

equivalence of the use of a memory or optical disk for their use to store a computer program in the disk drive art.

Fujiune et al. disclose an optical recording medium or controller constituted to be recorded with a program for setting recording conditions ([0145]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc of Shoji et al. to include a program as in Fujiune et al. because the selection of location for the program in either memory or optical disc would be a mere substitution of one art-recognized equivalent location for another (see Fujiune et al. [0145]).

Regarding claim 13, Shoji et al. disclose the optical recording medium in accordance with claim 12, as in the obvious combination above, with steps for determining the time at which the level of the pulse of the pulse train pattern used for forming the first recording mark is switched from a level corresponding to the level of the bottom power to a level corresponding to the level of the recording power (see Fig. 22; times TF1, TF2 and TF3) in accordance with at least one of the length of the first recording mark and a length of a blank region to be formed before the formation of the first recording mark (times TF1, TF2 and TF3 vary according to preceding space length).

Shoji et al. disclose an apparatus for setting recording conditions but fail to disclose the optical recording medium further constituted to be recorded with a program for setting recording conditions, rather the program is stored in a memory (Fig. 1, element 127 and Fig. 15, element 1520). The examiner takes Official Notice of the equivalence of the use of a memory or optical disk for their use to store a computer program in the disk drive art.

Fujiune et al. disclose an optical recording medium or controller constituted to be recorded with a program for setting recording conditions ([0145]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc of Shoji et al. to include a program as in Fujiune et al. because the selection of location for the program in either memory or optical disc would be a mere substitution of one art-recognized equivalent location for another (see Fujiune et al. [0145]).

8. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoi (U.S. Patent 7,006,419) in view of Fujiune et al. (U.S. Publication 2004/0037197).

Regarding claim 12, Yokoi discloses an optical recording medium (Fig. 7, element 1) comprising a substrate and at least one recording layer and constituted so that at least two recording marks are formed and data are recorded in the at least one recording layer thereof when it is irradiated with a laser beam whose power is modulated in accordance with a pulse train pattern (see Fig. 1c) including at least a pulse whose level is set to a level corresponding to a level of a recording power (see Fig. 1c; P_w) and a pulse whose level is set to a level corresponding to a level of a bottom power (see Fig. 1c; P_b), with steps for determining the pulse train pattern so that a level of a pulse is switched from a level corresponding to the level of the recording power to a level corresponding to the level of the bottom power in accordance with at least one of a length of a first recording mark, a length of a blank region to be formed immediately after formation of the first recording mark and a length of a second recording mark formed subsequent to the formation of the first recording mark (see Fig. 2c).

Yokoi discloses an apparatus for setting recording conditions but fail to disclose the optical recording medium further constituted to be recorded with a program for setting recording conditions, rather the program is stored in a recording condition memory means (Fig. 7, element 18). The examiner takes Official Notice of the equivalence of the use of a memory means or optical disk for their use to store a computer program in the disk drive art.

Fujiune et al. disclose an optical recording medium or controller constituted to be recorded with a program for setting recording conditions ([0145]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc of Yokoi to include a program as in Fujiune et al. because the selection of location for the program in either memory means or optical disc would be a mere substitution of one art-recognized equivalent location for another (see Fujiune et al. [0145]).

Regarding claim 13, Yokoi discloses the optical recording medium in accordance with claim 12, as in the obvious combination above, with steps for determining the time at which the level of the pulse of the pulse train pattern used for forming the first recording mark is switched from a level corresponding to the level of the bottom power to a level corresponding to the level of the recording power (see arrows of Fig. 2c indicating the rising edge of the various pulse signals) in accordance with at least one of the length of the first recording mark and a length of a blank region to be formed before the formation of the first recording mark (arrow lengths vary according to the recording mark length).

Yokoi discloses an apparatus for setting recording conditions but fail to disclose the optical recording medium further constituted to be recorded with a program for setting recording conditions, rather the program is stored in a recording condition memory means (Fig. 7, element 18). The examiner takes Official Notice of the equivalence of the use of a memory means or optical disk for their use to store a computer program in the disk drive art.

Fujiune et al. disclose an optical recording medium or controller constituted to be recorded with a program for setting recording conditions ([0145]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc of Yokoi to include a program as in Fujiune et al. because the selection of location for the program in either memory means or optical disc would be a mere substitution of one art-recognized equivalent location for another (see Fujiune et al. [0145]).

Allowable Subject Matter

9. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 9, no reference alone or in combination discloses switching recording power levels in accordance with a normalized delay period T3' that is a function of recording velocity.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Toda et al. (U.S. Publication 2003/0067856).

Toda et al. disclose a time delay as a function of a succeeding recording mark but fail to disclose a time delay as a function of a first recording mark, a blank region after the first recording mark and a second recording mark after the first recording mark.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal Jones whose telephone number is 571-272-2849. The examiner can normally be reached on Monday through Friday, 8:30 a.m. to 6 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJ

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER